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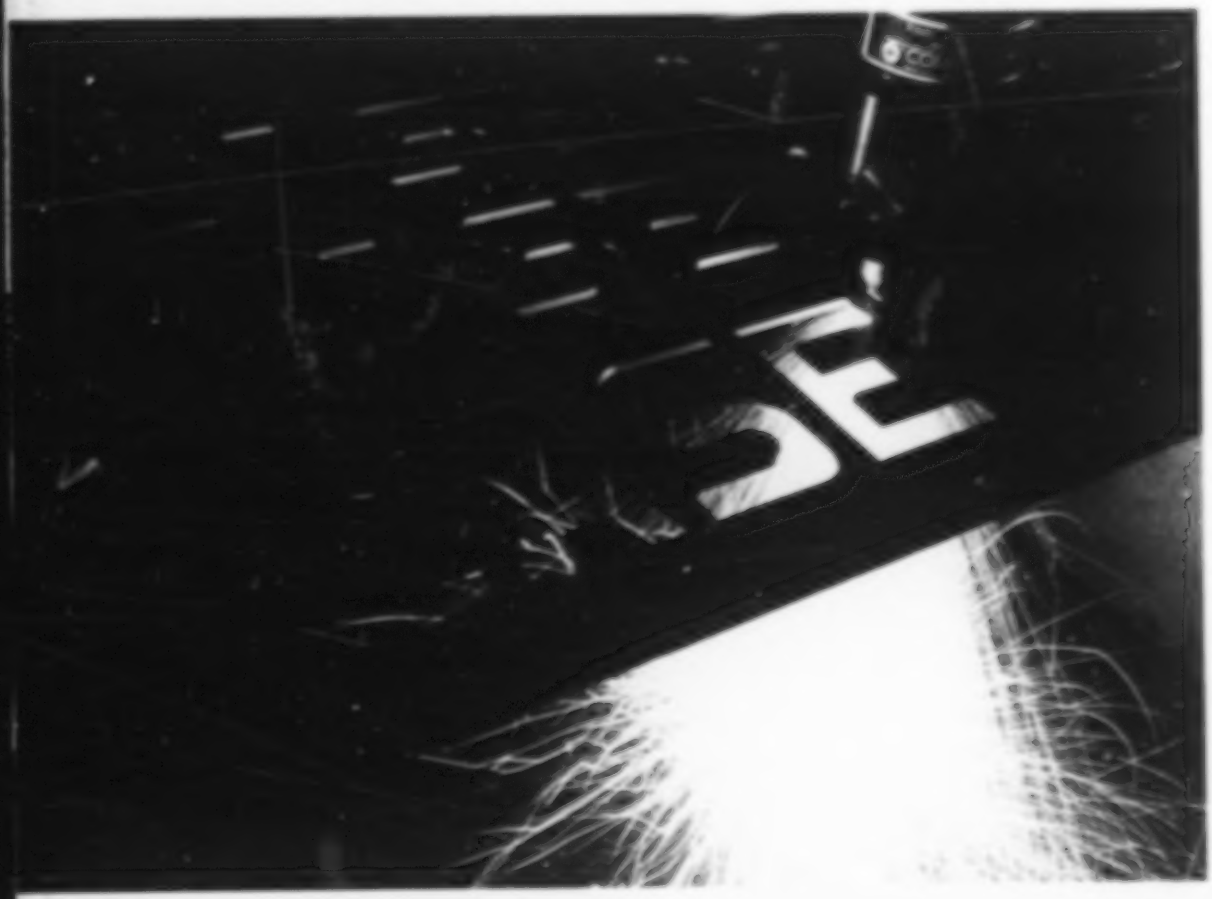

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THE COVER:
A CO_2 laser cuts .125 steel like butter demonstrating its flexibility for metalworking. Lasers also 'shine' for drilling, welding, marking and other applications. Photo courtesy of Coherent General, Sturbridge, MA.

NEXT MONTH:
Manufacturing strategies are vitally important in order to plan the utlization and implementation of the most productive processes, so say a group of seven PRODUCTION Round Table participants.

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TECHNOLOGY UPDATES

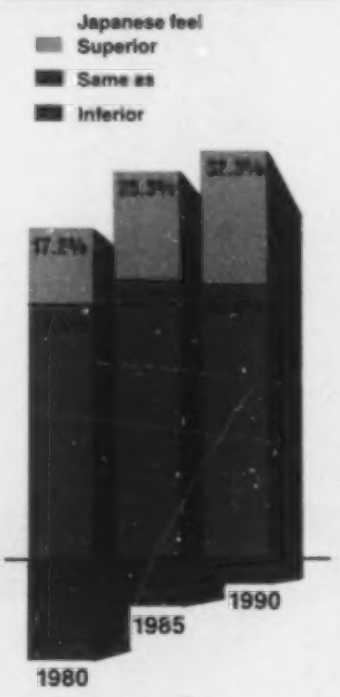
Technological Superiority Overseas

In a recent survey among 1623 of Japan's leading firms by the Japanese Economic Planning Agency, nearly 90 percent expressed confidence that their technological capacity has already caught up with or surpassed that of U.S. companies. Furthermore, about 60 percent indicated they intend to emphasize independent development of new technologies and nearly one-third of those polled believed it would become increasingly difficult to acquire foreign technologies in the future.

The annual survey, conducted since 1961, also showed nearly 80 percent of Japan's manufacturing firms cited technological innovation as the most important factor in determining their capital investments, which are expected to register about 5 percent annual growth in the next three years.

More than 70 percent intend to place strong emphasis on labor-saving and efficiency enhancements in promoting their capital investments, the survey said. About 50 percent of the firms indicated they are currently making direct investments overseas, and a majority have plans to expand these investments in the next five years. Asia is targeted for most of the increased investment with the U.S. and Canada ranked next and Western Europe mentioned third.

Japan vs. U.S. Technology
(Survey of Japanese Companies)



Source: Japan Economic Journal

Walking Robots Next?

In several projects at universities in this country, mechanical walking technology is being developed which could have manufacturing applications. Specifically, robots that could walk in addition to doing mechanical arm manipulations would make further automation of the factory possible.

One such machine is the six-legged Adaptive Suspension Vehicle designed by Robert B. McGhee, an electrical-engineering professor at Ohio State University and pioneer in walking machinery. Under contract to the Pentagon's Defense Advanced Research Agency, the research effort currently is focused on providing the Army with a vehicle capable of a variety of walking motions on uneven surfaces.

McGhee's brainchild which weighs as much as a medium-sized truck will be ready for testing by the end of this summer. Fifteen on-board minicomputers will be programmed for the stroll on uneven terrain and a special radar system using infrared light to produce a 3-D image of the ground will instruct the machine where to step. ■

ROBOTICS/AUTOMATION

Ford Invests in American Robot

Under the terms of a recent major agreement, Ford Motor Co. will invest nearly $20 million in equity and R&D funding in American Robot Corp., Pittsburgh, to develop Computer Integrated Manufacturing (CIM) technology.

ARC already has a strong base in manufacturing intelligent industrial robot and vision systems. Recently the company has expanded into broad software-based CIM systems. These systems integrate robots, vision systems, workcell controllers, CAD systems and mainframe computers using ARC's proprietary CIM software.

A group dedicated to support Ford's CIM needs has been formed and will be headed by Larry Lewis. The CIM group will be responsible for systems analysis and evaluation of Ford's plants to determine the hardware and software requirements for installing CIM systems.

According to Romesh Wadhwani, chairman and CEO of ARC, "The potential payback from this new concept of 'white collar robotics' is even greater than that